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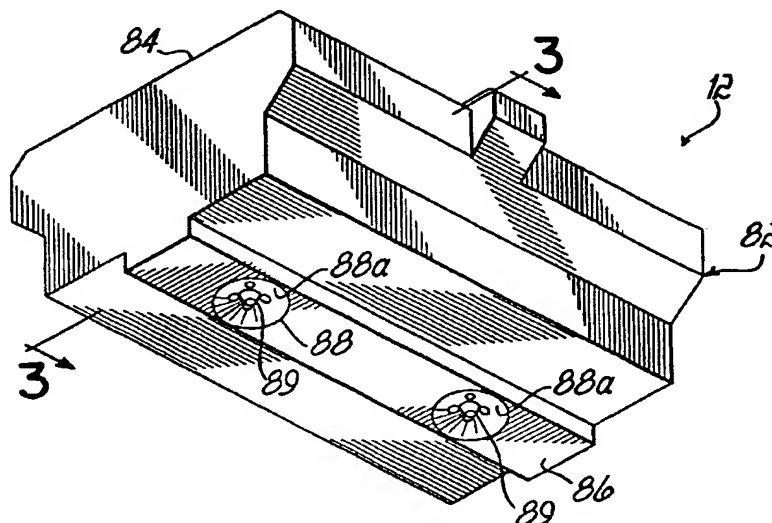
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- (71) Applicant (for all designated States except US): NORDSON CORPORATION [US/US]; 28601 Clemens Road, Westlake, OH 44145 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BOGER, Bentley, J. [US/US]; 9225 Huntcliff Trace, Atlanta, GA 30350 (US). SAINE, Joel, E. [US/US]; 625 Buckhorn Tavern Road, Dahlonge, GA 30533 (US).
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- (74) Agents: ROONEY, Kevin, G. et al.; WOOD, HERRON & EVANS, L.L.P., 2700 Carew Tower, Cincinnati, OH 45202 (US).
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(57) Abstract: An apparatus (10) for dispensing a filament of liquid includes a nozzle (12) having a liquid discharge passage (46) and a plurality of air discharge passages (70, 72, 74, 76). The liquid discharge passage (46) extends centrally through a frustoconical protrusion (89) which is located in a recess (88). The air discharge passages (70, 72, 74, 76) are arranged in a pattern around the liquid discharge passage (46) at the base of the protrusion (89) within the recess (88). The air discharge passages (70, 72, 74, 76) have axes (70a, 72a, 74a, 76a) which are inclined such that jets of air from the air discharge passages (70, 72, 74, 76) are tangential to the filament (13) dispensed from the liquid discharge passage (46). The jets of air cause the filament (13) to move in a swirl pattern as it is deposited on a substrate (18).

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